

the nerve impulse was a conducted local depolarization which produced this difference in potential across the axon membrane, but the investigations performed by Hodgkin and Huxley revealed that the nerve impulse exceeded the value of this resting potential by some 35%. These studies were carried out on the giant axons of the squid which have a diameter of 0.7 mm. as compared with the nerve fibres of vertebrates which have a diameter of 0.015 mm. Taking advantage of the larger size of the squid axon, Hodgkin and Huxley were able to insert microelectrodes into these fibres and measure the electrical charges therein. By this means they observed that depolarization initiates a specific "leak" of sodium ions which migrate into the axon and thereby create the rising phase of the nerve impulse. This process quickly terminates and is replaced by a specific "leak" of potassium ions from the axon during the falling phase of the nerve impulse. The elucidation of this sodium-potassium ion shift made it possible to account for the nerve impulse in quantitative physico-chemical terms, thereby solving a problem which had baffled neurophysiologists for years. These findings have since been demonstrated in vertebrates by Dr. Bernard Frankenhaeuser, at the Nobel Institute for Physiology in Stockholm.

The nerve impulse, an event which persists for about one millisecond and creates a potential of about 100 millivolts, is the fundamental unit in the code by which nerve cells communicate with each other and carry out instructions emanating from the brain and destined for motor and secretory cells.

The award of the 1963 Nobel Prize in Physiology or Medicine to Sir John Eccles marks the second occasion in the past four years on which this signal honour has been bestowed upon a scientist from our fellow Commonwealth democracy down-under; in 1960 Sir Frank Macfarlane Burnett, another distinguished Australian, shared this award with Britain's Peter Bryan Medawar for their notable contributions in the field of immunology.

The honour to Professor Huxley adds new lustre to the name of a brilliant family that for more than a century has expressed its genius in the worlds of science and letters through the contributions of his illustrious elder half-brothers, Aldous and Sir Julian, and their grandfather, that eminent Victorian physician, scientist, author and philosopher, Thomas Henry Huxley.

NEW WATCHDOGS

WHAT keeps a physician faithful to his ancient oath however dimly he perceives the all-embracing covenant embodied in the Oath of Hippocrates? The Oath has recently been referred to as 'a picturesque rigmarole';¹ nevertheless, the average physician accepts its spirit and intention as the ideal standard of professional behaviour. Although this, like any human behaviour, is com-

plex, it is not an excessive oversimplification to say that the doctor keeps up standards because he enjoys his job: he is doing what he wants to do and is still able, in many instances, to find a great deal more reward in his way of life than that represented by his monetary remuneration.

From his first months as a medical student he is used to working under surveillance and is accustomed to an atmosphere in which his work is being compared continually to some external standard. Hospital practice is carried on under the eyes of committees that measure the quality of work performed by a series of rough approximations. In private practice the practitioner's performance is still under survey, chiefly by his close associates, by his senior colleagues and by consultants to whom he turns occasionally for advice, and of course by his patients' relatives and friends.

By and large, the physician lives under this surveillance with composure and even may be indifferent to or unaware of a great part of it. Generally the better he is at his job the less he needs to fear the scrutiny of his colleagues or of official bodies. If asked he will say that it is a good thing that doctors are watched carefully because great effort and continuous vigilance are needed to maintain quality in the branch of applied biology called medicine.

Traditionally in large part, the "watchdogs" of quality in medical practice and the zealous guardians of the patient's welfare have been members of the health professions, backed up here and there by members of the community who have taken the trouble to become informed; that is, "quality control" has been applied from within as a continuous process built into the provision of service. Indeed, the record of modern medicine has been one of continuous technical successes in its efforts to improve its control over a hostile environment.

In a provocative article in *Punch* entitled "The Ghost of Hippocrates", Hubbard¹ draws attention to the new attitude of the patient to the doctor in Great Britain, and probably elsewhere, in these words:

"If the ordinary man no longer sees the doctor as a figure of mysterious knowledge and saving power, it is not because the doctor is now by way of being a public servant but because the ordinary man is no longer inclined, if he can help it, to feel that way about anyone. . . . There seems to be a loss of confidence all round—by the patients and doctors in each other, and by both in the dignity and nobility of the practice and profession of healing."

Side by side with this mechanistic view of medical care, a new determination is evident on the part of some "consumers" (a dreadful neologism for "patients"?) to peer over the physician-mechanic's shoulder as he adjusts the human soma or psyche. In Hubbard's words:

"It is not a matter of thinking we know as much as the doctor. . . . We admit his superior knowledge

of the way our bodies work, but we know that he had a long and expensive education in these matters and we expect him to justify it. We take an ailing body to him in much the same spirit as we take a badly running car to the garage; and in the surgery, as in the garage, we expect a straight answer and an effective remedy."

Elsewhere in this issue (page 1004) *The London Letter* describes a new organization which has arisen in Great Britain called the Patients' Association. Judging from a description of the Association's aims in the quarterly magazine, *20th Century*,² it is not only militant but possessed by the *idée fixe* that patients are regarded or treated by their doctors as "guinea-pigs", that doctors by and large disregard the intelligence and human feelings of patients, and so on. A progress report on the Association gives this cheery picture: "About a hundred complaints have been reviewed and advice given. . . . The establishment of an office in Grays Inn Road, W.C. 1, and the appointment of a full-time paid secretary early in May have relieved the very over-worked committee and will permit greatly increased activity and expansion. Local branches are already springing up to deal with local problems."

What is disturbing is the thought that those outside of the profession would—without taking any responsibility for the solution of the problems inherent in the provision of medical care, and without considering the nearly immutable factors which hedge in the health worker in the particular situations against which they inveigh—erode the morale of the practising physician and others in places of responsibility by ceaseless and largely useless carping. Another disturbing undertone in this enthusiasm for consumers' organizations is the implication that, having abandoned the concept of individual responsibility for services rendered, it is now possible to *enforce* quality.

Perhaps when the sociologists get around to it they will find that "medical consumers' protective" associations are another symptom of the increasing loss of contact between the individual and his "personal" physician. In an earlier time, the physician was responsible solely to the patient. The patient, as his part of the bargain, paid the doctor as he was able in coin, produce and also in trust, truthfulness and a responsible observance of instructions "his" doctor gave him. This payment for services rendered has been to an increasing degree swept away, and the patient may be looking for another hold on the doctor, having lost the purchase (no pun intended) afforded by payment.

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SCRATCH ONE LABORATORY TEST

SURELY every medical student must hear the tale, beloved by lecturers on obstetrics, of the ancient Egyptian method of diagnosing pregnancy.

Urine from a pregnant woman, it was said, would cause grain to grow; if the woman was not pregnant no growth would occur. Some versions predicted fetal sex, depending on the type of grain germinated.

These ideas are not myths. The Egyptians, we know, did claim to diagnose pregnancy in this way. The Berlin papyrus describes a

. . . test for a woman who will bear or a woman who will not bear. Wheat and spelt (barley?): let the woman water them daily like dates and like *sh'at* seeds in two bags. If they both grow, she will bear; if the wheat grows, it will be a boy; if the spelt grows, it will be a girl. If neither grows, she will not bear.¹

Interest in the tests has increased in recent years with our knowledge of hormonal alterations in the urine in pregnancy. There is a certain appeal to the historian in the thought that the ancients may have anticipated twentieth-century technology by means of accurate scientific observation three or four thousand years ago.

Some authors, for example, Forbes,² have suggested that these methods of diagnosis are unreliable. Nevertheless, a sensation of nostalgic sadness, as on the destruction of a famous and familiar landmark, attended the appearance, in the July issue of *Medical History*, of an article which suggests that the tests are indeed useless.

Drs. Ghalioungui, Khalil and Ammar of Cairo, writing "On an Ancient Egyptian Method of Diagnosing Pregnancy and Determining Foetal Sex",³ put the method to scientific analysis. Forty-eight samples of urine were tested. Forty were from pregnant women. Full-strength urine and various dilutions were used in the experiment. Two varieties of wheat and two of barley were the test grains.

It was found that no growth occurred in grain to which the urine of non-pregnant women was added. Urine from pregnant women inhibited growth in 12 cases out of 40. In the remaining, appreciable growth occurred. However, this was always less than that in grain watered, as a control, with distilled water.

The sex of the unborn child could not be predicted from the kind of cereal that grew most quickly. It was concluded that when growth occurred, the urine was presumably that of a pregnant woman, but the reverse was not necessarily true. And it must be noted that the number of non-pregnant urines tested was rather small to justify a conclusion that these urines never affect germination.

Next thing we know, some busybody will carry out experiments to prove that copper armlets don't prevent arthritis, or that a tot of rum doesn't cure the common cold. Ah, progress!

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